

# Digital video, presence and pedagogy

*Patrick Carmichael, University of Bedfordshire, UK*

**ABSTRACT.** As universities face up to new economic conditions and technological developments, digital technologies and video in particular are seen as a means by which mass higher and pre-professional education can be delivered at comparatively low cost. The introduction of video is often accompanied by powerful rhetorics of excellence, openness and student-centred learning but these often simultaneously diminish the importance of pedagogy, reducing teachers to technicians and students to consumers of online content. In this paper I will draw on a series of recent research and development projects in UK higher education and discuss how Deleuzo-Guattarian perspectives on learning and design make it possible to use web technologies and digital video within novel and emancipatory pedagogies.

**KEYWORDS:** *Collaborative learning, Digital video, Higher education, Linked data, MOOCs, Pedagogy, Semantic technologies*

## Introduction

The global financial crisis has thrown into high relief longer-term debates about models of higher education, and raised questions what students can expect from universities, particularly in those countries that are committed to the provision or expansion of mass higher education. My own particular interest is in the discourses and practices around technology-enhanced learning, an area that has formed a central element in university expansion programmes, but which is like the rest of education systems, now finds itself subject to financial strictures. This centrality means that debates about the role of technology in teaching, learning, assessment and administration provide a useful means by which we can explore broader questions about the future of higher education – at institutional, national and international levels.

In this paper, I will look in particular the different roles that digital video can play in online learning environments, drawing on the experiences of research and development projects which have

made use of digital video content in order to enhance teaching and learning in undergraduate, postgraduate and pre-professional university courses. I will also explore some of the pedagogical assumptions that underpin the current development of Massive Open Online Courses (MOOCs), within many of which digital video content plays a central part, and also to offer some alternative scenarios by which what are ostensibly the same technologies, with the same affordances can be mobilised in support of diverse pedagogical practices and learning outcomes.

Digital video, like other online technologies, has rapidly gone from being part of a phenomenon driven by changing student expectations (universities having been concerned as to how they should attract and support what they saw as a new generation of digital natives), to being part of the solution to a financial crisis which brings with it both economic and educational advantages of particular kinds. The positive rhetorics around cyberlearning identified by Suoranta, Tomperi, and Fitzsimmons (2005, p. 193) of freedom, flexibility, autonomy, self-direction, openness, effectivity, productivity have been enthusiastically adopted and are now part of the offer being made to prospective students, but often with little recognition of Suoranta and colleagues' gloomier vision of the pedagogical limitations that technologies may bring.

John Stone articulates this optimistic, pro-technology, position, arguing that both institutions and students benefit from the delivery of curricular content via online means:

“The delivery of technology-enabled distance learning instead of, or alongside traditional face-to-face tuition potentially brings many benefits, both educationally, and in terms of cost-efficiency. For the learner, it can foster development of a wide-range of skills, such as independent enquiry [and] self-management as well as technological awareness and media literacy. For the institution, it delivers well-reported cost-efficiencies”. (Stone, 2010)

A further argument in favour of online methods of curriculum delivery, and digital video in particular, is that it offers students access to world-leading expertise. Jim Knight, Minister of State for Schools and Learners under the UK last Labour Administration and a commentator on learning technologies, argues that the future of

higher education could be based around a combination of Web 2.0 technologies and approaches and online video content:

“you can do it at distance, having peer-to-peer learning and using some of the things we are used to, like social networking, for exchanges of ideas and papers ... Why would you go along to a university and hear someone who may or may not be the best in their field when you can go on to iTunes-U and hear a lecture by the very best?” (Knight, cited in Merlin, 2011)

Again we see the rhetorics of self-direction and flexibility, now conflated a notion that the quality of knowledge-as-objects is measurable (the “very best” academics delivering superior content). Technological infrastructures, digital video included, are seen as providing low-cost ways of transmitting this high quality but pedagogically-neutral learning content, with discussion and meaning making enabled by the perceived tools of choice of the current generation of digital natives. This hybrid model, with Web 2.0 technologies allowing participation and interaction amongst the viewers of high quality digital video content, is embodied in the design of many of the MOOCs that are now emerging as alternative means by which learners can engage in higher education.

But these developments raise broader questions about the nature of the enablement and enhancement that is being offered by technologies. Kirkwood and Price (2013) have highlighted the widely varying conceptions of enhancement in technology enhanced learning (TEL) with particular affordances being valued and privileged by different authors, interest groups and theoretical stances. And, as Conole and Dyke (2004) suggested a decade ago, even the notion of affordance is open to contestation: the very same features that are seen by some as advantages or enhancements to learning may be seen by others as significant disadvantages or even disincentives. In the case of digital video, the very fact that it is to be made available on demand and to be viewed on multiple devices may in fact constrain the content that is offered, or may encourage only cursory viewing. And having the “best in their field”, as Knight suggests, is no guarantee of content that what they deliver is tailored to student needs, or that it addresses the misconceptions they may hold or the issues they find challenging.

What it is desirable for technologies to enable and enhance is a question to which there are no clear-cut answers, and will vary widely according to curricular, national and cultural contexts.

### **Digital video: three scenarios**

My contention is that digital video has the potential to be used in a variety of pedagogically rich and challenging ways. To see the enablement and enhancement that it offers, as Knight and others have suggested, solely in terms of the delivery by experts as knowledge-as-objects may lead us towards pedagogically impoverished learning environments. Just because students, may, in many settings, now be “paying customers” does not mean that they have to be passive consumers, and the ready availability of the means of producing digital video opens up many opportunities for their being producers and co-producers, as well as consumers of high quality knowledge and learning resources .

In the latter sections of this paper I will present some means by which digital video has been used in a series of research and development projects in which I have been involved – one in which it was used to address “troublesome knowledge” that students found challenging; and another in which students generated, selected and shared video themselves. But first, I want to look at some aspects of the use of digital video in MOOCs in particular, and to highlight the usefulness of the notion of presence – of both teachers and students – in online environments that have digital video at their core.

#### ***The new Christminster: MOOCs as digital Windows into academia***

Kalowich (2013), reporting the results of a recent survey conducted by the Chronicle of Higher Education, highlights how central digital video, and particularly video lectures, are in online courses developed for deployment in MOOCs. In contrast with conventional Virtual Learning Environments, where embedded video emerged well after other tools and features (driven to a large extent by the ability to outsource video-hosting and streaming to cloud services), many MOOCs can be seen primarily as platforms for the delivery of this video content. But this raises some interesting questions about the nature of the student experience (both of the MOOC to which

they subscribe, and more generally).

Jeremy Knox has explored the role of video content in MOOCs and offers some useful insights into their claims of openness, framed by socio-material and spatial theories (Knox 2013a, 2013b). He argues that:

“The video lecture performs a unique trick in the MOOC by performing a double illusion: presence and non-mediation. The pre-recorded video lecture provides the MOOC learner with a teacher who is persistently in attendance, and who is able to perform teacherly duties on demand. Paradoxically, the pre-recorded video lecture permits the teacher to be less present in the actual duration of a MOOC than in the preparatory stages of filming. The perceived visibility of the teacher in the video lecture corresponds to an actual invisibility of the teacher ... the video lecture serves to frame pedagogy in a very specific and inflexible way, solidifying a traditional form of didactic teaching as the primary mode, and disregarding the potential instabilities and opportunities for difference that the video and digitality represent.” (Knox, 2013b, p. 5)

What this (non)-presence on the part of the teacher reinforces is the concomitant absence of the student from the very environment that contributes to the expert, didactic role of the teacher. Despite the fact that the embedded video may be surrounded by images of place (representations of book-lined studies, doorways, cloisters, spires and ivy-covered brickwork, for example, are common), the student is external to this, as though they are looking through a window or frame into an elite educational establishment to which they may aspire, to whose MOOC they may be subscribed, but from which they may remain physically excluded.

As in Thomas Hardy's *Jude the Obscure* (1895), in which the protagonist, a self-educated stonemason, aspires to study at Christminster (a pseudonym for Oxford), the student, even when “present” remains an unequal partner, with limited potential for their voice to be heard in pedagogical discourse. Hardy's description of Jude's predicament serves as a prescient warning for those designing, contributing to, or enrolling in MOOCs:

“Knowing not a human being here, Jude began to be impressed with the isolation of his own personality, as with a self-spectre, the sensation being that of one who walked but could not make himself seen or heard.”

The idea of a window into an alternative educational world is sadly reminiscent of Jude’s only opportunity to sample what the students of Christminster were offered on a day-to-day basis, as he is reduced to lingering by the open windows of lecture halls, saying to others: “Listen - I may catch a few words of the Latin speech by staying here; the windows are open”.

So, can we develop alternative scenarios which enable and enhance by offering different patterns of presence, interaction and difference? And which offer students more than the experience of watching and listening at windows, while remaining unseen and unheard?

### *Troublesome concepts and pedagogical content knowledge*

One of the most fruitful contributions to thinking about student learning, curriculum design and assessment over the last decade, has been a programme of work initiated by Meyer and Land on threshold concepts and troublesome knowledge in higher education (see for example Meyer and Land, 2005 and 2006; Land, Meyer, Smith, 2008). Teachers and students have been involved in exploring those concepts that are transformative, irreversible, integrative (of apparently diverse knowledge), reconstitutive and, for a range of reasons, troublesome. Encouraging teachers to reflect on those concepts that students find troublesome and which, once they have grasped them, enable them progress to deeper levels of understanding, is an effective focus for professional development (Irvine, Carmichael, 2009).

As part of a research and development project to explore the potential of various online technologies to support the teaching and learning of these threshold concepts, digital video was used to capture teachers’ pedagogical strategies. Following a process during which both teachers and students identified the particular concepts that they considered to either troublesome or transformative (or both), experienced teachers were invited to contribute short video excerpts in which they discussed why each concept was difficult, how different learners had engaged with them,

and teaching strategies they had used as teachers. In some cases, they reflected on their own learning, and explained how *they* had grasped particular concepts and what this had then enabled them to do as a result. Where teachers used visual metaphors, models or showed “workings” these too were captured. The video excerpts were then compiled into sets and deployed through an institutional Virtual Learning Environment (See Figure 1).

Figure 1. Threshold Concepts Online. The teacher video is accompanied by visual content (derived in this case from a teacher’s demonstration of how to solve an equation). Further troublesome threshold concepts identified by teachers and students are listed in the left menu.

The screenshot shows a video lecture interface. On the left, there is a small video window showing a teacher. Below it is a vertical menu with the following items: Introduction, In the Plant Cell, Water Potential, Solute Potential, Turgor Pressure, Water Potential Components (highlighted), Guard Cell as a Model System, SPAC, Osmometer, Turgor Pressure Probe, Pressure-Volume Curve, Hoffer Diagram, and Bulk Elastic Modulus. The main content area displays a slide titled "Water Potential Components". The slide contains the following text and equations:

$$\Psi_w = \Psi_s + \Psi_p$$

Below the equation, arrows point from  $\Psi_w$  to  $(-ve)$ , from  $\Psi_s$  to  $(-ve)$ , and from  $\Psi_p$  to  $(+ve)$ . Below this, the equation is solved:

$$-1.0 = -1.2 + \Psi_p$$

$$\Psi_p = +0.2 \text{ MPa}$$

Technically, there is little difference between this and much of the video lecture content that currently populates MOOCs. But the content offered here has been identified by teachers and students as part of a consultative process, and the focus of the videos is not on the delivery of subject matter but, rather, on what Shulman (1987) describes as “pedagogical content knowledge”, that is, the knowledge of what makes for effective teaching and learning that is the basis for the selection, organisation and presentation of the knowledge teachers want their students to acquire.

The teacher has a different kind of presence in this situation, acting not only as a subject expert but as one who scaffolds and supports learning, drawing on their knowledge of what it is that students find challenging and on their experience of how best to teach it. Evaluations of this initiative were very positive, with students suggesting that what the online environment structured around threshold concepts offered was something less like an online lecture

and, was instead more like a personal tutorial. By framing the use of video content in this way, and asking teachers to consider how they would support the learning of particular concepts by students in one-to-one or small group settings, the student has greater presence in the online environment; the emphasis is shifted from didactic transmission of content, to reflection by all parties on how best to learn.

In their introduction to the idea of threshold concepts, Meyer and Land describe threshold concepts as “akin to a portal, opening up a new and previously inaccessible way of thinking about something”. By using digital video in a way informed by this way of thinking, the video portal has the potential not just to provide a glimpse through a window, but rather an invitation to participate in pedagogical discourses and engage in discipline-specific ways of thinking and practicing.

But still, the presences of teachers and students are still, Knox would propose, illusory and in reality, non-interactive. How might digital video itself enabling a richer kind of presence and its associated discourses?

### *Transversality, participation and students as producers of knowledge*

In the course of the large research and development project “Ensemble: Semantic Technologies for the Enhancement of Case Based Learning” (<http://www.ensemble.ac.uk>) researchers and software developers worked with teachers and students in six different disciplinary settings in higher education to explore the potential of emerging Semantic Web and Linked Data technologies and approaches to support teaching, learning and research. One aspect of this work involved developing semantic media – linking digital video content to other resources, annotations, memos and tags, allowing the video content to form the core of “rich web page” (see Martinez-Garcia et al. 2012; Carmichael, Tscholl, 2013, for further details of this work).

This project was committed to involving teacher and students in participatory design and evaluation approaches and developed a novel rapid-prototyping approach which allowed prototypes to be produced and brought back into design workshops for potential users to assess and suggest further developments. It

also was concerned not to be technology-led, but rather to allow technological and pedagogical practices to develop together, with teachers and students learning about the affordances of technologies, while the developers learned about the pedagogical, professional and personal concerns of participants.

The writings of Deleuze and Guattari provided a guide as to how processes of design and development might best be organised and understood. In particular, project researchers drew on Guattari's work on transversality – an approach informed by his work in psychiatric practice and as a political activist, and driven by dual concerns to ensure meaningful presence to encourage reflexive enquiry. According to Guattari, the transverse group (of doctors and patients, of teachers and students, of activists) both “hears and is heard” and “endeavours to control its own behaviour and elucidate its object, and ... produce its own tools of elucidation” (Guattari, 1984, p. 14). Transversality, in such groups, writes Guattari:

“... is a dimension opposite and complementary to the structures that generate ... hierarchisation ... this dimension can only be seen clearly in certain groups which, intentionally or otherwise, try to explore the meaning of their praxis and establish themselves as subject groups”. (1984, p. 23)

In the particular case of technology-enhanced learning, the notion of transversality becomes particularly valuable as a means of developing both mutual understandings and a programme of action which itself is then open to scrutiny and redirection. It goes beyond conventional approaches to participatory design in that all participants have a role in setting the direction of the group, rather than teachers and students taking part only in requirements-gathering, testing or evaluation within parameters set by designers or software developers.

The first group that was constituted in this way was comprised of a group of teachers and undergraduate students of Contemporary Dance. They already had experience and expertise in the use of network technologies, including digital video, to support teaching, learning and performance, most notably through the development of a final year course in “telematic performance” (Brooks, Kahlich, 2009). What emerged from the extended conversations between the members of this group was an interest in using digital video of

performances in teaching, to inform choreographic practice, and to inform reflective learning, assessment and the building, by students, of electronic portfolios.

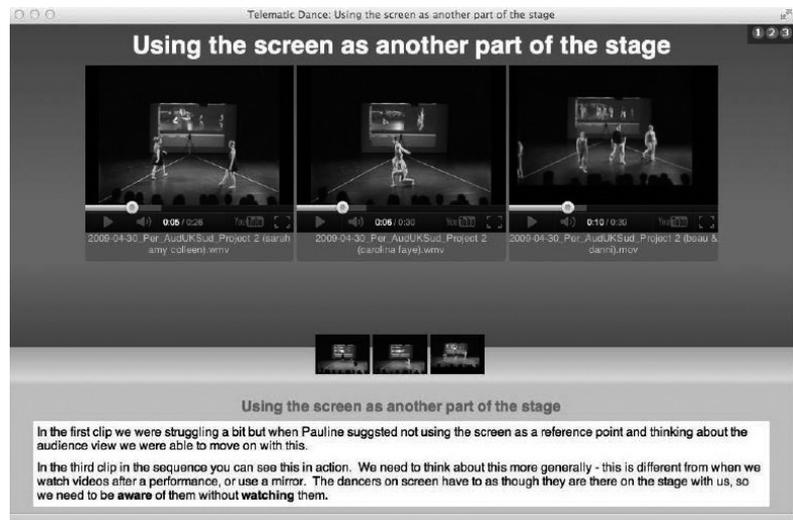
Through a process of rapid prototyping and development, a semantic media platform was developed that allowed both teachers and students to upload, share and annotate videos: they were also able to identify segments of videos and combine these into sequences with accompanying narratives. In the hands of teachers, this latter feature allowed the compilation of video content to illustrate teaching points, or to support assessment, or to provide feedback to students; for students, it was a means by which they could review their performances and provide evidence of development and achievement (see Figure 2). An account of this design and development process is provided by Brooks (2012) and a more technical description of the resulting software platform in a use case published by the World Wide Web Consortium (Morris, 2012).

It is of course tempting to argue that this represented a unique case, and that it was easy to support a group of teachers and students whose pedagogy and performance already involved the use of video, and where there were established discursive and reflective practices associated with this. But the online platforms that have been developed through this work have found wider applications in other disciplinary and curricular settings ranging from pure sciences to modern history and from sports science to education studies. In the last of these, a recently initiated project involves experienced researchers preparing short lectures or conversations about educational research methods; these are associated (using the linked data approaches mentioned above) with other resources, readings, project websites and even primary research data. But more tellingly, students too are now producing their own videos in which they reflect on the aspects of their own dissertation research that have proved challenging, or which have raised ethical or methodological issues, and these too are being shared online.

In the Contemporary Dance example, and in those that it has subsequently inspired, teachers and students have presence that extends beyond that in MOOCs or the Threshold Concepts online environment. The transversality that informed the design of the environment enables further groups of teachers, students and others to be involved in pedagogically diverse and rich

relationships - the online learning environment itself encourages new patterns of participation and transversality. Student learning is not simply recognised as being important, but is actively supported; teachers and students are seen as co-producers of knowledge rather than as deliverers and consumers. And while, again, the fundamental technologies employed are the same as those that underpin other digital video platforms and MOOCs, they are being used in ways that offer more than glimpses through windows.

Figure 2. Student generated video with accompanying narrative. Specific segments of the three videos have been identified and play automatically. All the video content is stored remotely and a metadata record links the narrative to the video segments.



## Concluding remarks: presence and pedagogy?

In the three scenarios that I have outlined here, the nature of pedagogical practice, and the importance attached to it, varies widely. In the first, characterised by the video lecture within the MOOC, the emphasis, as Knox suggests, is on the transmission of expert knowledge to a potentially wide audience. It does seem ironic that at a time when the formal lecture is on the one hand being dismissed as a redundant, pedagogically impoverished approach that is inappropriate in a digital age, it is, on the other, so central to current developments in digital learning. In the second, the idea of threshold concepts provides a means of encouraging pedagogical sensitivities amongst both teachers and students, and

at the very least it provides students with an awareness that not all of the curricular content they encounter may be equally easy to grasp, and that some of what they learn may cause them to re-evaluate their prior experience and beliefs. The final example shows how digital video can play a role in online environments in which pedagogical activities and discourses occur within the environment itself. They are contingent on participation and presence of teachers and students and (following Guattari) on their asking, “is this how we wish to teach and learn?” and “is this the direction in which we should go?”.

Presence then, is a consideration that needs to inform all phases of technology-enhanced learning – in their design, in the generation and provision of content, and in the discourses that surround that content. In practical terms, this means that students need to be involved in the design and development of online platforms and as producers of online content with digital video an obvious means by which they can participate and have presence. Subject expert voices need to be accompanied by those of those with pedagogical content knowledge and of a great diversity of learners. Deleuze and Guattari caution that:

“If the three ages of the concept are the encyclopedia, pedagogy and commercial professional training, only the second can prevent us from the heights of the first into the disaster of the third: an absolute disaster for thought whatever its benefits might be, from the viewpoint of universal capitalism”. (Deleuze, Guattari, 1994)

This warning is pertinent to technology enhanced learning, and, perhaps, particularly to the use of digital video, offering as it does, an easy didacticism. At a time when personal technologies, new web platforms and cloud computing could allow the emergence of pedagogically imaginative solutions and innovative, generative notions of teacher and learner presence, it would indeed be a disaster if they were used solely to offer glimpses that owe more to commercial training than to the pedagogical richness of higher education.

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## Sintesi

Negli ultimi anni, i video e le tecnologie digitali sono divenuti, sotto l'incalzare concomitante della crisi economica globale e dello sviluppo dell'ICT, un ritrovato quasi miracoloso, l'unica risorsa che riesce a garantire simultaneamente sia una Higher Education e un'istruzione pre-professionale di massa che costi relativamente contenuti. L'analisi dell'Università di Bedfordshire mette in guardia contro i facili entusiasmi suscitati dal loro utilizzo superficiale e denuncia, accanto all'enfasi retorica che ne accompagna l'introduzione nell'insegnamento universitario – caratterizzata da parole

chiave quali eccellenza, apertura, apprendimento centrato sullo studente – la repentina scomparsa della pedagogia, di modo che i docenti si riducono ormai a tecnici e i discenti a consumatori di contenuti online.

In realtà, i video digitali, nella loro versatilità, possono assolvere funzioni assai diversificate negli ambienti di apprendimento online in molteplici modalità, ricche e stimolanti sotto il profilo pedagogico.

La ricerca esamina criticamente una serie di progetti condotti recentemente nella realtà accademica britannica e dimostra che l'approccio didattico e progettuale ispirato a Deleuze e Guattari è il più efficace per sfruttare al meglio tali tecnologie, all'interno di pedagogie moderne che promuovono l'emancipazione e l'autonomia dello studente. Si passano quindi in rassegna, per l'impiego dei video digitali, tre scenari-tipo di ambienti di apprendimento online.

In primo luogo, nei MOOC (Massive Open Online Courses) l'accento si pone sulla trasmissione di conoscenze e sapere esperto a un pubblico potenzialmente assai ampio. Qui la videolezione preregistrata, con la doppia illusione della presenza e della non-mediazione, resuscita paradossalmente proprio la lezione tradizionale, da tempo irreversibilmente abbandonata dall'apprendimento digitale perché obsoleta e troppo povera sul piano pedagogico.

In secondo luogo, i cosiddetti concetti soglia – che risultano ora trasformativi ora problematici, capaci di integrare conoscenze apparentemente eterogenee e di ricostruirle in maniera creativa – incoraggiano la sensibilità pedagogica fra insegnanti e studenti, coinvolgendoli profondamente nella loro esplorazione dinamica: in tale contesto, i video dei docenti sono corredati da contenuti visivi, modelli e metafore di grande incisività didattica. L'insegnante non è un semplice esperto della materia, ma sostiene e guida l'apprendimento, mettendo pienamente a frutto le conoscenze e le esperienze maturate in precedenza dagli studenti, le quali sono pertanto consapevolmente attivate e rivalutate.

Infine, gli ambienti di apprendimento online, contraddistinti da trasversalità, partecipazione e presenza vigili e riflessive di docenti e discenti, consentono un impiego innovativo dei video digitali, non soltanto proficuo dal punto di vista pedagogico, ma pure in grado di trarre il massimo profitto dalle tecnologie del Semantic Web e dei Linked Data.

La presenza in particolare deve informare tutte le fasi dell'apprendimento potenziato dalla tecnologia: la progettazione, lo sviluppo, la distribuzione e tutto quel che riguarda il contenuto. Di conseguenza, se gli studenti sono impegnati direttamente nella progettazione e nello sviluppo delle piattaforme così come nella produzione dei contenuti online, i video digitali possono rappresentare mezzi preziosi, che permettono loro di partecipare attivamente e di essere effettivamente presenti. Ed è essenziale assicurare un'autentica polifonia, in cui alle voci degli esperti della materia si possano unire quelle degli specialisti di pedagogia e di didattica e di una varietà di discenti.

*Nel solco di Deleuze, è la pedagogia, in ultima analisi, a scongiurare il rischio di scendere in un banale didatticismo, che l'utilizzo frettoloso dei video digitali garantisce invece immediatamente, senza troppo sforzo. Grazie alle nuove tecnologie e piattaforme web e al cloud computing, infatti, essi oggi possono contribuire validamente, ben oltre la dimensione commerciale, alla ricchezza dell'Higher Education: possono cioè incoraggiare la nascita di inedite modalità di rappresentazione e diffusione dei contenuti, di soluzioni pedagogiche ingegnose, di innovative nozioni di presenza, vantaggiose sia per gli insegnanti che per gli studenti.*